

**DARKFIELD INSPECTION SYSTEM
HAVING A PROGRAMMABLE LIGHT SELECTION ARRAY**

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ABSTRACT OF THE DISCLOSURE

An inspection tool embodiment includes an illumination source for directing a light beam onto a workpiece to generate scattered light that includes the ordinary scattering pattern of the workpiece as well as light scattered from defects of the 10 workpiece. The embodiment includes a programmable light selection array that receives light scattered from the workpiece and selectively directs the light scattered from defects onto a photosensor which detects the defect signal. Processing circuitry receives the defect signal and conducts surface analysis of the workpiece that can include the characterizing of defects of the workpiece. The programmable light 15 selection arrays can include, but are not limited to, reflector arrays and filter arrays. The invention also includes associated surface inspection methods.